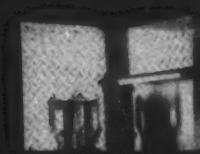




2005

Alberta Fire Commissioner's Statistical

R E P O R T



Alberta
Municipal Affairs
and Housing

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Messages



Minister's Message

The Government of Alberta is committed to providing safe and secure communities and recognizes the importance of partnerships with communities, fire departments and industry to achieving that goal.

The Alberta Fire Commissioner's Office has a very important role in helping Alberta's fire services find new and effective ways of delivering services and enhancing public safety. The Fire Commissioner's Office supports communities by providing them with expert technical and operational advice, assisting them with inspections and investigations, as well as public education programs needed to help prevent fires, injuries and a variety of emergency incidents.

I encourage everyone with a stake in public safety in Alberta to continue to build and sustain these important relationships.

Thank you for your dedication and commitment to the safety of all Albertans.

A handwritten signature in dark ink, appearing to read 'Ray Danyluk'.

Ray Danyluk
Minister, Alberta Municipal Affairs and Housing



Fire Commissioner's Message

The Fire Commissioner's Statistical Report for 2005 details the various ways uncontrolled fires can pose a threat to the public. I encourage all fire and emergency services in the province to use the findings in this report as a guide for making informed decisions to improve the safety of their communities.

The Report shows the devastating effects of fire in the province of Alberta. In 2005, a total of 5,191 fires, resulting in 38 deaths, 247 injuries and over \$450 million in direct property losses, were reported. The direct property loss is only a small portion of the real losses due to fire; in some cases the indirect costs are as much as nine times that of the direct losses. The public, industry, fire and emergency services and other safety and emergency response stakeholders have a critical role in reducing these losses.

Safety related decisions that affect all Albertans are based primarily on good information. I encourage all fire and emergency services in the province to use the findings in this report as a guide when making decisions that impact the safety and well being of their communities and to continue their valuable contribution to the collection and dissemination of fire statistics to keep Alberta safe.

Yours in safety,

A handwritten signature in dark ink, appearing to read 'Rick McCullough'.

Rick McCullough
Fire Commissioner

Fire Deaths and Death Rates 1996 - 2005 (Alberta and Canada)

Year	Population*	Fire Deaths	Alberta Fire Death Rate**	Canada Fire Death Rate***
1996	2,679,435	41	1.5	1.3
1997	2,744,731	37	1.3	1.4
1998	2,781,290	20	0.7	1.1
1999	2,871,271	51	1.8	1.3
2000	2,932,963	27	0.9	1.1
2001	2,962,664	43	1.5	1.1
2002	3,056,739	31	1.0	1.0
2003	3,161,371	24	0.8	0.9
2004	3,206,953	27	0.8	1.0
2005	3,277,582	38	1.2	0.9

* Source: Alberta Municipal Affairs & Housing.

** Fire Death Rate = number of fire deaths per 100,000 population.

*** Source: Council of Canadian Fire Marshals and Fire Commissioners.

FIRE

- Based on known probable causes of death, smoke inhalation accounted for 61%, burns for 16%, physical injuries for 11% and all other causes for 13% of all fire deaths in 2005.
- The annual fire death rates in Alberta (for 1996-2005) have fluctuated around an average of 1.2 deaths per 100,000 population, with a range of 0.7 to 1.5 and have exceeded the Canadian rate (average 1.1 and range 0.9 to 1.4) four times during the last 10 years.



Alberta Fire Casualties

Location of F I R E Deaths 2005	
Athabasca No. 12, County of	1
Barrhead	1
Black Diamond	1
Calgary	4
Clearwater County	1
County of Lethbridge	2
Edmonton	10
Grande Prairie	1
Hanna	1
Mountain View County	1
Newell No. 4, County of	2
Northern Sunrise County	2
Oyen	2
Pigeon Lake I.R. #138A	1
Red Deer County	1
Rocky View No. 44, M.D. of	3
Slave Lake	2
Strathcona County	1
Yellowhead County	1
Total	38

Causes of Fire Deaths

Fire Deaths

One & Two Family Dwellings, Apartments and Mobile Homes

An electrical short circuit ignited wall components	1
Child playing with match / lighter ignited cardboard, etc.	2
Cigarette ignited upholstered furniture	1
Cigarette ignited upholstered furniture – victim asleep	1
Free-standing fireplace ignited unknown materials	2
Ignorance of hazard: unknown material ignited in pan on stove top	2
Ignorance of hazard: open flame ignited cotton fabric	2
Lighter ignited unknown material	1
Malfunction of electrical wiring ignited electrical insulation	1
Smoker's material ignited bedding – victim suspected impaired by drugs, alcohol or medication	1
Smoker's material ignited undetermined fabric	1
Suspected arson ignited unknown material	1
Arson with source of ignition (unknown) ignited gasoline	1
Undetermined arson (lighter) ignited gasoline	1
Unknown	5

Hotel, Inn, Lodge (year round use), Rooming, Boarding, Lodging House (less than 10 persons)

Portable space heater installed too close to combustibles	2
Unknown	2

Outdoor Property-Unclassified

Match or lighter ignited synthetic clothing	1
Match or lighter ignited clothing – victim suspected impaired by drugs, alcohol or medication	1
Match ignited gasoline – victim physically / mentally disabled	1

Automobiles (includes cars, trucks, vans, single body units)

Motor vehicle crash ignited gasoline	4
Cigarette ignited unknown material	1

Private Aircraft

Mechanical failure caused ignition of undetermined material	1
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Petroleum, Natural Gas (excl. oil pipeline)

Undetermined source of ignition ignited natural gas	1
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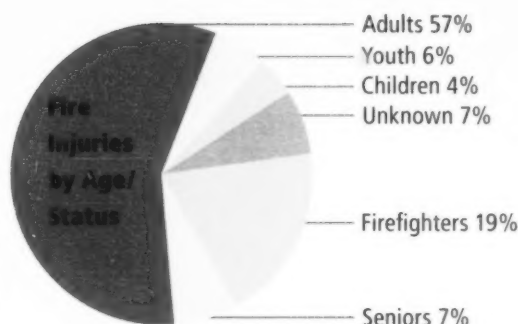
Crops, Orchards, Straw Stacks

Undetermined arson (lighter) ignited gasoline	1
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Total

38

Alberta Fire Casualties



Seniors: 65 years of age and older

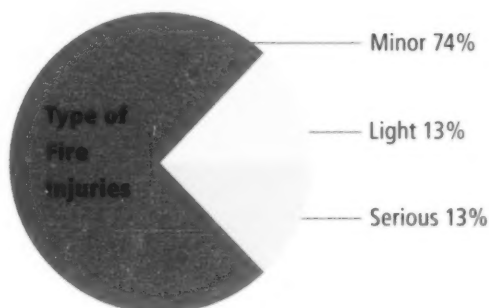
Adults: 18 - 64 years

Youth: 12 - 17 years

Children: 11 years and under

Note: No firefighters died in 2005 fires

Definitions of injuries are provided in the glossary.



FIRE

- On average, a fire related death occurred every 10 days in Alberta in 2005.
- 13% of all fatal casualties were impaired (alcohol / drugs / medication) and 18% were asleep at the time of the fire. The condition was unknown in 37% of the fatal casualties and the action was unknown in 53% of the fatal casualties.
- There were 0.7 fire injuries per day, on average, in Alberta in 2005.
- 63% of the injured casualties were awake and normal at the time of fire; 8% were asleep and 9% were impaired by alcohol / drugs / medication.
- 51% of fire injuries occurred when persons entered or remained inside a building for firefighting (41%), for rescue (6%) and to save property (4%).
- 10% of fire injuries occurred while persons were attempting to escape.
- The adult male to female ratio for civilian fire injuries was 2.4:1 and for fire deaths was 3.4:1.

Risk of Fire Deaths and Injuries

The risk of dying or being injured in a fire can be calculated as the fire death rate or fire injury rate – the number of casualties in an age group divided by the population of the age group. When fire deaths or injuries were calculated for the five-year period, 2001-05, as rates per 100,000 population, per annum, using the above formula, it was found that:

- Seniors (65 years and older) had the highest risk of dying in fires (fire death rate of 1.5), followed by adults (20-64 years) (1.2), children (5-9 years) (0.5), youth (15-19 years) (0.4), children (0-4 years) (0.4) and youth (10-14 years) (0.1).
- Civilian adults (20-34 years) had the highest risk of being injured in fires (fire injury rate of 10.7) followed by adults (35-49 years) (8.4), youth (15-19 years) (6.3), adults (50-64 years) (6.1), seniors (65 years and older) (5.6), youth (10-14 years) (4.5), and children (9 and under) (2.6).

Population data source: Alberta Ministry of Health and Wellness – *Alberta Health Care Insurance Plan Statistical Supplement 2004/2005*.

Alberta Fire Casualties



Fire Casualties by Month



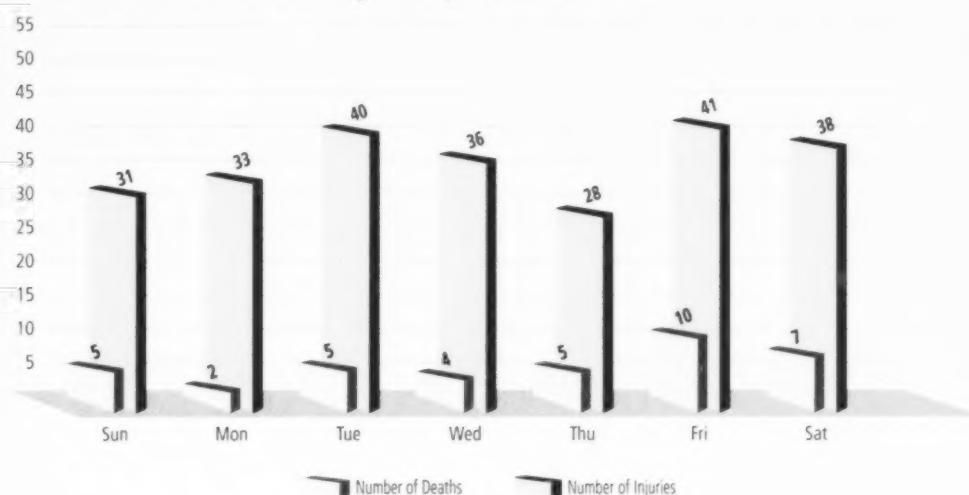
FIRE

Most fire deaths in 2005 happened in February (18%), followed by January (16%), and most fire injuries occurred in April (13%), followed by November (11%). However, a five-year (2001-05) analysis revealed that most fire deaths happened in February (15%) followed by January and June (10%). In a similar analysis, most fire injuries happened in January (10%) and in April (9%).

In 2005, most fire deaths (26%) and most fire injuries (17%) happened on Fridays. A five-year analysis revealed Saturdays to have the most fire deaths (23%) and fire injuries (16%).

Forty-seven per cent of all fire deaths occurred between 2:30 and 10:29 p.m. followed by 10:30 p.m. to 6:29 a.m. (29%). The majority of fire injuries (51%) occurred between 2:30 and 10:29 p.m. A five-year analysis showed most fire deaths (38%) happened between 10:30 p.m. and 6:29 a.m., while most fire injuries (38%) happened between 2:30 p.m. and 10:29 p.m.

Fire Casualties by Day of Week



Fire Casualties by Time of Day

Time Periods	Type			
	All Injuries		Fire Deaths	
	No.	%	No.	%
6:30 a.m. - 2:29 p.m.	72	29.1	8	21.1
2:30 p.m. - 10:29 p.m.	127	51.4	18	47.4
10:30 p.m. - 6:29 a.m.	48	19.4	11	28.9
Unknown	—	—	1	2.6
Total	247	100	38	100

Fire Deaths by Major Property Classification

Property Classification		Fire Deaths	
		No.	%
Residential	One & Two Family Dwellings	14	36.8
	Apartments	6	15.8
	Mobile Home (1 or 2 family units)	3	7.9
	Rooming, Boarding, Lodging House (less than 10 persons)	2	5.3
	Hotel, Inn, Lodge (year round use)	2	5.3
	Sub Total	27	71.1
Special Property – Transportation Equipment	Trucks (including light trucks/vans/single body units)	4	10.5
	Outdoor Property – Unclass.	3	7.9
	Cars	1	2.6
	Private aircraft	1	2.6
	Sub Total	9	23.7
Miscellaneous Property	Crops, Orchards, Straw Stacks	1	2.6
	Petroleum, Natural Gas (excl. oil pipeline)	1	2.6
	Sub Total	2	5.3
Total		38	100.0



FIRE

Fire Facts: 71% of fire deaths occurred in residential properties.





Fire Injuries by Major Property Classification

Property Classification	No.	%
Residential		
One & Two Family Dwellings	81	32.8
Apartments	47	19.0
Mobile Home (1 or 2 family units)	14	5.7
Hotel, Inn, Lodge (year round use)	4	1.6
Other Residential	9	3.6
Special Property – Transportation Equipment		
Brush/Grass & Light Ground Cover on Open Land/Field and Trash/Rubbish/Recyclable	14	5.7
Cars and Trucks (incl. light trucks/van/single body units) and other vehicles	16	6.5
Outdoor Property-Unclassified	6	2.4
Other Special Property	3	1.2
Industrial Manufacturing Properties	18	7.3
Storage Properties	9	3.6
Mercantile	8	3.2
Miscellaneous Property	8	3.2
Institutional	4	1.6
Assembly	4	1.6
Business and Personal Service	2	0.8
Total	247	100

Major Causes of Fire Injuries

Causes	No.	%
Stove top fire in pan/deep fryer with ignition of cooking oil	31	12.6
Cigarette/smoker's material igniting bedding and a variety of other combustibles	27	10.9
Arson/vandalism	26	10.5
Electrical wiring, switches, panels, extension cords, power bars igniting building components	16	6.5
Stove top fires (all other fires except cooking oil)	14	5.7
Cutting, welding, other torches	10	4.1
Candles igniting a variety of combustibles	9	3.6
Child fireplay with matches, lighters, smoker's materials, etc.	9	3.6
Exposure from other fires	8	3.2
Furnace/water heater, mostly igniting flammable liquids/gases	8	3.2
Chimney or fireplace igniting mostly structural components	7	2.8
Internal combustion engine, mostly igniting flammable liquids	6	2.4
Other cooking appliances – ovens, barbecues, separate deep fat fryers, etc.	4	1.6
Other	48	19.4
Unknown	24	9.7
Total	247	99.8

FIRE

Most fire injuries occurred in residential properties (63%), particularly in one & two family dwellings (33%), apartments (19%) and mobile homes (6%).

The majority of fire injuries were inflicted in fires related to cooking (20%) followed by smoking (11%), arson/vandalism (11%) and electrical wiring, switches and panels (6%).

Fire Losses in Alberta 1996 - 2005

Year	Fires	Deaths	Injuries	\$ Losses	Adjusted \$ Losses
1996	6,304	41	451	120,556,429	112,354,547
1997	6,670	37	448	141,964,034	129,647,520
1998	6,579	20	429	139,492,065	126,009,092
1999	6,380	51	386	146,519,201	129,205,645
2000	6,457	27	341	158,724,441	135,199,694
2001	7,022	43	393	229,233,932	190,869,219
2002	5,993	31	307	272,667,763	219,539,262
2003	5,645	24	322	348,361,472	268,590,187
2004	5,137	27	291	202,624,657	154,087,192
2005	5,191	38	247	453,649,926	337,788,478
Total	61,378	339	3,615	2,213,793,920	1,803,290,834

Adjusted losses were calculated from actual losses using the Annual Consumer Price Index (C.P.I.) figures for Alberta obtained from Statistics Canada (1992 CPI = 100).



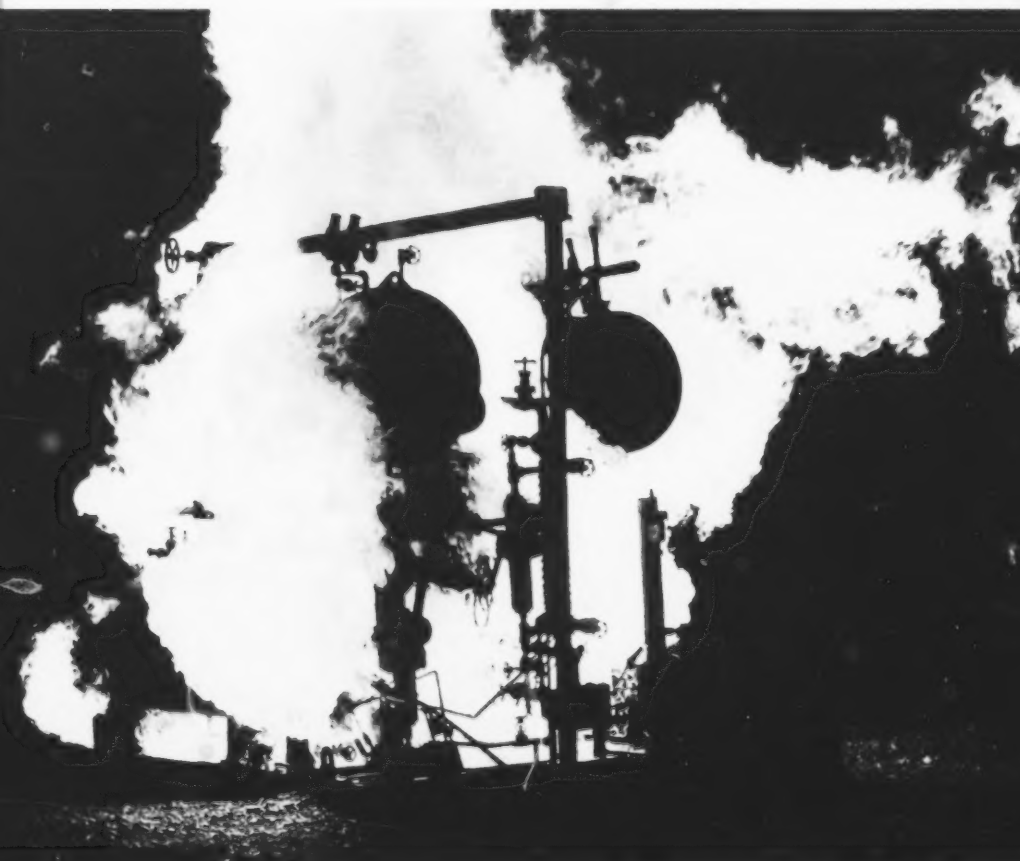
FIRE

During the 10-year period 1996-2005, the annual number of fires reported to the Fire Commissioner's Office averaged 6,138. 2002 marks the first year in which the number of fires declined below 6,000. Whether this decline is real or due to sub-standard reporting is not clear.

The numbers of all fire related deaths and fire injuries have fluctuated between 20-51 (average 34) and 247-451 (average 361), respectively.

From a total of 5,191 fires during 2005, there were 2,847 structural fires (55%); 1,600 vehicle fires (31%) and 744 outdoor fires (14%).

There were 14 destructive fires per day, on average, in Alberta during 2005. Direct property losses from fires were approximately \$1,242,877 per day and \$87,392 per fire.





Fire Rates and Per Capita Losses 1996 - 2005

Year	Population	Fires	Fire Rate	Loss Estimate	\$ Loss/Capita
1996	2,679,435	6,304	2.4	120,556,429	45.0
1997	2,744,731	6,670	2.4	141,964,034	51.7
1998	2,781,290	6,579	2.4	139,492,065	50.2
1999	2,871,271	6,380	2.2	146,519,201	51.0
2000	2,932,963	6,457	2.2	158,724,441	54.1
2001	2,962,664	7,022	2.4	229,233,932	77.4
2002	3,050,889	5,993	2.0	272,667,763	89.4
2003	3,091,831	5,645	1.8	348,361,472	112.7
2004	3,124,923	5,137	1.6	202,624,657	64.8
2005	3,242,110	5,191	1.6	453,649,926	139.9

*Fire Rate = Number of fires per 1,000 population.

Fire Losses Related to Economic Indices 1996 - 2005

Year	Fire Losses (\$)	Gross Domestic Product (\$ million)*	% of GDP	Personal Income (\$ million)**	% of Personal Income
1996	120,556,429	98,634	0.12	66,938	0.18
1997	141,964,034	107,048	0.13	72,952	0.19
1998	139,492,065	107,439	0.13	78,279	0.18
1999	146,519,201	117,080	0.13	81,151	0.18
2000	158,724,441	144,789	0.11	89,094	0.18
2001	229,233,932	151,274	0.15	98,131	0.23
2002	272,667,763	150,814	0.18	100,748	0.27
2003	348,361,472	171,175	0.20	105,217	0.33
2004	202,624,657	187,152	0.11	112,190	0.18
2005	453,649,926	215,858	0.21	121,574	0.37

* Source: *Canadian Economic Observer*, Statistics Canada – Cat.no. 11-210, 2005/2006.

** Source: *Provincial Economic Accounts, 2005 Preliminary Estimates*, Statistics Canada – Catalogue no. 13-213.

FIRE

The fire rate for the province has averaged 2.1 between 1996 and 2005.

As a percentage of gross domestic product, fire losses have increased by 91% between 2004 and 2005. As a percentage of personal income, fire losses have increased by 161% over the same period.

May and April (11% each), followed by October (9%) had the highest average number of fires per month. January (48%) had the highest average dollar losses per month, followed by February (12%) and May (6%).

The number of fires was highest on Fridays and Saturdays (15% each), while dollar losses were highest on Tuesdays (52%) and Thursdays (14%).

Where the time of fire was known, the number of fires was highest between 4 and 8 p.m. (20%) and 12 noon and 4 p.m. (19%). Dollar losses were highest between 8 a.m. and 12 noon (50%).

Fire Losses by Major Property Classification

Major Property Classification	Fires	%	\$ Losses	% of \$ Losses
Assembly	153	3	23,763,415	5.2
Institutional	27	1	325,195	0.1
Residential	1,656	32	99,982,573	22.0
Business and Personal Service	42	1	1,680,423	0.4
Mercantile	105	2	12,532,008	2.8
Industrial Manufacturing Properties	107	2	12,996,496	2.9
Storage Properties	311	6	48,122,219	10.6
Special Property-Transportation Equip.	2,404	46	34,551,007	7.6
Miscellaneous Property	386	7	219,696,590	48.4
Total	5,191	100	453,649,926	100.0

Fire Losses by Major Sources of Ignition

Major Sources of Ignition	Fires	%	\$ Losses	% of \$ Losses
Not Determined	1,265	24	104,619,762	23.1
No Igniting Object	24	0	1,344,845	0.3
Cooking Equipment	367	7	9,174,234	2.0
Heating Equipment	278	5	13,613,407	3.0
Appliances & Equipment	144	3	5,179,332	1.1
Electrical Distribution Equipment	580	11	27,448,256	6.1
Other Electrical Equipment	107	2	4,609,569	1.0
Smoker's Material & 'Open' Flames	1,312	25	49,715,255	11.0
Exposure	637	12	22,227,946	4.9
Miscellaneous	477	9	215,717,320	47.6
Total	5,191	100	453,649,926	100.0

FIRE

- The largest number of fires occurred in ground transport vehicles (26%), one & two family dwellings (20%), followed by trash/rubbish/recyclables (8%), apartments (6%) and individual residential parking garages (4%).
- Property classes with the highest dollar losses were petroleum or natural gas wells (\$201 million or 44%), one & two family dwellings (\$59 million or 13%), cold storage facilities (\$38 million or 8%), and apartments (\$30 million or 7%).
- The most frequent areas of fire origin were in vehicle (31%), outside (21%), function (16%) and structural areas (12%).
- Motor vehicle electrical distribution system, internal combustion engine, etc. (12%), exposure fires (12%), smoker's materials (12%), electrical wiring, lamps and equipment (8%), heating equipment (5%), and stove top burners (4%), were the most common sources of ignition in Alberta fires in 2005.
- The highest known property loss was attributed to fires where source of ignition was a miscellaneous igniting object unclassified (\$203 million or 45%). Sources of ignition were not determined in 24% of the fires in 2005, and these caused \$105 million in property losses.
- Where known, the most common fuel or energy associated with the source of ignition were:
 - electricity (22%)
 - matches or lighters not related to smoking (14%)
 - exposure fires (12%)
 - smoker's material (7%)
 - gasoline (4%)
 - coal/wood/coke/paper, etc. (3%).

FIRE

Arson and vandalism accounted for 26% of all fires in Alberta in 2005. This means that approximately one out of four fires was deliberately set.

The other common acts or omissions were electrical short circuits (8%), mechanical/electrical failure/malfunction (8%), part failure/leak or break (7%), ignorance of hazard (6%), misuse of smoker's materials (5%), inadequate control of "open" fire (2%) and overheated cooking oil, grease, wax (2%).

Acts or omissions were not determined in 14% of the fires and these fires accounted for \$81 million in property losses. Mechanical or electrical failure or malfunction accounted for the largest known dollar losses (\$252 million or 56%).

Materials most commonly ignited first were building components (14%), garbage/trash/rubbish (8%), gasoline (6%), electrical insulation in electrical equipment (5%), cooking oil/fat (3%).

Materials first ignited were not determined in 25% of the fires and these fires accounted for \$105 million in property losses. Ignition of building components accounted for the largest known dollar losses (\$55 million or 12%).

Fire Losses by Major Acts or Omissions

Major Acts or Omissions	Fires	%	\$ Losses	% of \$ Losses
Not Determined	752	14	81,158,829	17.9
Act or Omission Not Applicable	128	2	7,906,229	1.7
Arson or Set Fires	1,346	26	50,444,248	11.1
Misuse of Source of Ignition	562	11	16,896,485	3.7
Misuse of Material Ignited	272	5	8,548,477	1.9
Mechanical, Electrical Failure, Malfunction	1,283	25	252,402,724	55.6
Construction, Design, Installation Deficiency	83	2	4,246,152	0.9
Misuse of Equipment	63	1	4,079,413	0.9
Human Failing	591	11	25,127,345	5.5
Vehicle Accident	59	1	1,649,205	0.4
Miscellaneous	52	1	1,190,819	0.3
Total	5,191	100	453,649,926	100.0

Fire Losses by Major Materials First Ignited

Major Materials First Ignited	Fires	%	\$ Losses	% of \$ Losses
Not Determined	1,313	25	105,522,310	23.3
Building Components	735	14	55,394,400	12.2
Furniture, Furnishings	229	4	8,656,065	1.9
Clothing, Textiles	156	3	7,378,608	1.6
Wood, Paper Products	458	9	9,496,178	2.1
Flammable & Combustible Liquids	704	14	16,907,715	3.7
Flammable Gases	65	1	11,898,451	2.6
Chemicals	236	5	4,586,397	1.0
Agricultural Products	363	7	11,233,285	2.5
Miscellaneous	932	18	222,576,517	49.1
Total	5,191	100	453,649,926	100.0

Initial Detection of Fires

Method of Initial Detection	Fires	%
Automatic Sprinkler System	18	0
Automatic System Other Than Sprinkler	4	0
Heat Alarm: Single Station	7	0
Heat Detector: Linked To Alarm System	5	0
Initial Detection-Unclassified	42	1
Initial Detection-Unknown	58	1
No Initial Detection/Burnt Out	40	1
Smoke Alarm: Single Station	145	3
Smoke Detector: Linked To Alarm System	79	2
Visual Sighting/Personal Detection	4,793	92
Total	5,191	100

Fires by Method of Fire Control and Extinguishment

Method of Fire Control and Extinguishment	Fires	%
Miscellaneous-Unknown	386	7.4
Hand Fire Extinguisher	490	9.4
Standpipe System	118	2.3
Makeshift Fire Fighting Aid	400	7.7
Fire Department – Water	3,144	60.6
Fire Department – Other Than Water	238	4.6
Sprinkler System	18	0.3
Fixed System Other Than Sprinklers	7	0.1
Burned Out	335	6.5
Miscellaneous-Unclassified	55	1.1
Total	5,191	100.0



FIRE FACTS

- Visual sighting or other means of personal detection (92%) was the primary means of initial detection of fires in 2005, while smoke alarms/detector devices accounted for 5%.
- Where the method of fire control and extinguishment is known, fire departments extinguished 65% of all reported fires. The other common methods of fire extinguishment were hand fire extinguishers (9%) and "makeshift" fire fighting aids (8%).

Alberta Home Fire Losses



Home Fires by Type of Home

Type of Home	Fires	% of Fires	Deaths	% of Deaths	Injuries	% of Injuries	\$ Losses	% of \$ Losses
One & Two Family Dwellings	1,051	71	14	61	81	57	59,275,171	63
Apartments, Tenements, Flats	333	22	6	26	47	33	30,192,040	32
Mobile Homes	97	7	3	13	14	10	4,384,736	5
Total	1,481	100	23	100	142	100	93,851,947	100

Risk of Fire Loss by Type of Home 2001 - 2005

Type of Dwelling	No. of Units*	Fires/1,000 Homes	Fire Deaths/100,000 Homes	Fire Injuries/100,000 Homes
One & Two Family Dwellings	908,478	1.21	1.43	11.98
Apartments, Tenements, Flats	263,434	1.44	1.75	22.70
Mobile Homes	57,857	2.03	4.84	26.62

*Statistics Canada – Catalogue no. 62-202 provided an estimate of the number of households in Alberta (2005).

FIRE

Twenty-nine per cent of all fires in Alberta occurred in homes. Home fires accounted for 61% of all fire deaths (23 out of 38), 57% of all fire injuries (142 out of 247) and 21% of all property losses (\$94M out of \$454M) from fires.

The relative frequency of fire in apartments and mobile homes, compared to that in one & two family dwellings, is 1.2 and 1.7 times, respectively.

Compared to one & two family dwellings the risk of dying or being injured in a mobile home fire is over three times or over two times higher, respectively.

Home Fires by Major Areas of Fire Origin

Area of Origin	Fires	% of Fires	Deaths	% of Deaths	Injuries	% of Injuries	\$ Losses	% of \$ Losses
Kitchen/Cooking Area	316	21	3	13	41	29	8,095,417	9
Sleeping (under 5 occupants)	161	11	5	22	26	18	8,642,968	9
Exterior Wall	144	10	0	0	3	2	9,410,942	10
Lounge/Living Room	131	9	7	30	16	11	9,234,978	10
Area of Origin-Unknown	69	5	2	9	5	4	14,654,418	16
Laundry Area	69	5	0	0	5	4	2,407,070	3
Exterior Balcony/Porch	66	4	0	0	2	1	3,494,423	4
Heating Equipment Room	59	4	1	4	3	2	3,533,385	4
Court/Patio/Terrace	56	4	0	0	4	3	4,275,131	5
All Other Areas	410	28	5	22	37	26	30,103,215	32
Total	1,481	100	23	100	142	100	93,851,947	100

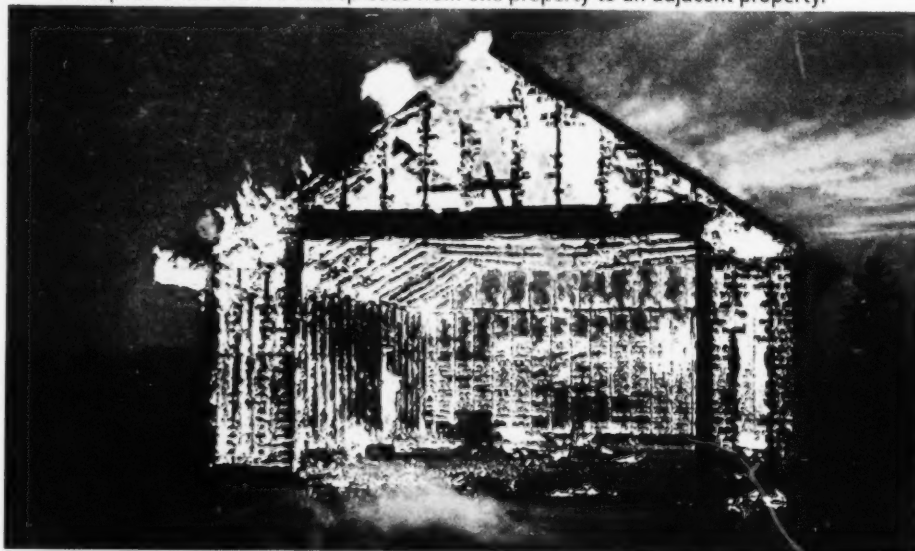
Major Known Causes of Home Fires

Fire Causes	Fires	% of Fires	Deaths	Injuries	\$ Losses
Other Cooking*	221	15	2	27	5,844,861
Arson/Set Fire	208	14	3	12	22,205,896
Smoking	180	12	4	18	10,251,473
Heating Equipment Related**	160	11	2	12	8,727,267
Electrical Distribution Equipment and Light/Flourescent Bulb	145	10	2	11	11,304,065
Exposure Fire***	93	6	0	1	9,417,305
Overheated Cooking Oil Fire	77	5	0	15	1,948,495
Candle (accident)	65	4	0	8	2,045,391
Clothes Dryer	37	2	0	3	166,964
Child Fire Play	33	2	2	9	1,497,236
Appliance/Equipment Related	32	2	0	4	1,708,234
Flammable/Comb. Liquid/Gas Ignition	15	1	0	2	1,177,616
Welding/Torch Too Close	10	1	0	1	337,200
Inadequate Control of Open Fire	5	0	0	0	632,399
Other Causes/Unknown	200	14	8	19	16,587,545
Total	1,481	100	23	142	93,851,947

* Cooking related fires except those involving overheated cooking oil.

** Heating equipment includes furnaces, water heaters, fireplaces, wood stoves, space heaters and associated chimneys/vents.

*** An exposure fire is a fire that spreads from one property to an adjacent property.



FIRE

Most home fires (21%) and most home fire injuries (29%) were in the kitchen/cooking area.

The highest percentage of deaths (30%) occurred where fires started in the lounge/living room.

Fires started in sleeping areas accounted for 11% of fires, 22% of deaths and 18% of injuries.

Most kitchen fires started on stove/top burners (77%), causing 67% of deaths and 88% of injuries in kitchen fires.

Major sources of ignition in living rooms were smoker's material (27%), electrical wiring/equipment/lamps/bulbs (14%), and candles (13%).

Major sources of ignition in bedrooms were smoker's material (32%) and candles (17%) followed by matches/lighters and electric lamps (7% each).

Exposure fires were the major sources of ignition (75%) where fires started on the exterior wall.

In court, patio and terrace area fires the main source of ignition was smoker's material (46%).

Fifty-one per cent of laundry area fires started in clothes dryers.

In the exterior balcony/porch area, most fires were caused by smoker's material (50%).

When fire originated in heating equipment rooms and chimney/flue-pipe/gas-vent areas, the main sources of ignition were furnaces (20%), fireplaces (16%), and chimneys (12%).



Home Fires by Smoke Alarm Operation

Smoke Alarm Installation

Status	Fires	% of Fires	Deaths*	% of Deaths	Injuries	% of Injuries	\$ Losses	% of \$ Losses
Not Installed	631	43	8	35	29	20	30,815,129	33
Installed	850	57	15	65	113	80	63,036,818	67
Total	1,481	100	23	100	142	100	93,851,947	100

*Please refer to the research article titled "Making sense of smoke alarm data and home fire deaths," in the August 2004 issue of *Alberta Fire News* (pages 16 - 19) for a detailed statistical analysis of home fire deaths in relation to smoke alarms.

Alberta Fire News is available at www.municipalaffairs.gov.ab.ca/fco_FireNews.htm

Activation of Smoke Alarms

Status	Fires	% of Fires	Deaths	% of Deaths	Injuries	% of Injuries	\$ Losses	% of \$ Losses
Activated	321	38	4	27	61	54	21,867,775	35
Not Activated	265	31	5	33	25	22	8,886,382	14
Activation – unknown	264	31	6	40	27	24	32,282,661	51
Total	850	100	15	100	113	100	63,036,818	100

Alarm Assistance to Occupants

Status	Fires	% of Fires	Deaths	% of Deaths	Injuries	% of Injuries	\$ Losses	% of \$ Losses
Not applicable/no occupants	35	11	0	0	1	2	3,372,549	15
Alarm assisted occupants to evacuate	231	72	1	25	42	69	15,297,169	70
Alarm did not assist occupants to evacuate	40	12	1	25	6	10	424,301	2
Occupant evacuation unknown	15	5	2	50	12	20	2,773,756	13
Total	321	100	4	100	61	100	21,867,775	100

Alberta Home Fire Losses

Reasons – Alarms Did Not Assist

Status	Fires	% of Fires	Deaths	% of Deaths	Injuries	% of Injuries	\$ Losses	% of \$ Losses
Alarm inaudible	1	3	0	0	0	0	36,000	8
Unable to evacuate-age related	3	8	0	0	3	50	167,950	40
Unnecessary to evacuate	32	80	0	0	1	17	84,376	20
Under the influence of drugs/alcohol	4	10	1	100	2	33	135,975	32
Total	40	100	1	100	6	100	424,301	100



Reasons – Alarms Not Activated

Status	Fires	% of Fires	Deaths	% of Deaths	Injuries	% of Injuries	\$ Losses	% of \$ Losses
Unsuitable location	18	7	2	40	3	12	455,729	5
Dead battery	31	12	1	20	0	0	1,001,339	11
No battery	42	16	2	40	10	40	1,604,016	18
AC not connected/disabled	10	4	0	0	1	4	972,985	11
Mechanical failure	10	4	0	0	2	8	224,950	3
Not enough smoke*	154	58	0	0	9	36	4,627,363	52
Total	265	100	5	100	25	100	8,886,382	100



FIRE

In 2005, 43% of homes where fire occurred did not have smoke alarms installed. Lack of power source was the major reason for no alarm activation (32%).

*Since most of these fires originated in outside areas or structural areas of homes, an adequate amount of smoke did not reach inside the homes to trigger the smoke alarms.

Glossary

For a more detailed description of the following variables, please refer to the *Alberta Fire Statistics Reporting Manual* available on the Fire Commissioner's Office website at www.municipalaffairs.gov.ab.ca/fco_ReportingForms.htm.

Act or Omission

The human element by which someone has done something (an act) or failed to do something (an omission). The act or omission indicates whether the fire was deliberate, neglectful or accidental.

Incendiary or Set Fires:

includes arson, suspected incendiarism, riot, mischief or vandalism.

Misuse of Source of Ignition:

includes disposal of smoker's material, thawing, inadequate control of an open fire, children playing with source of ignition, welding or cutting too close to combustible material or torch too close to combustible material.



Misuse of Material Ignited:

includes fuel spilled accidentally, improper fuelling technique, cleaning or washing parts, improper container, overheated cooking oil, combustible placed too close to heat, and improper storage.



Mechanical and Electrical Failure or Malfunction:

includes part failure, automatic or manual control failure, electrical short circuit and part worn out.

Construction, Design or Installation Deficiency:

includes construction or design deficiency, installation too close to a combustible, other installation deficiency or over fusing.

Misuse of Equipment:

overfuelling, includes any misuse of equipment or tools.

Human Failing:

includes person asleep, temporary loss of judgement, physical disability, panic, influence of alcohol or drugs and ignorance of hazard.

Area of Origin

The area of a building or vehicle where the fire started.

Means of Egress:

the area allowing an individual transit or a way of going out. Includes hallway, stairway, escalator, lobby and elevator.

Assembly, Sales Area:

areas where groups of people gather. Includes theatre, arena, lounge, living room,

sales or show room, library, museum and sports facility.

Function Area:

the area where a mode of action or activity is undertaken. Includes sleeping area, dining area, bar, washroom, office, laboratory, printing and photographic reproduction area, kitchen, laundry room, operating room, performance area and manufacturing area.

Storage Area:

the area inside a building where items are stored. Includes product storage area, closet, equipment area, records storage area, shipping and receiving area, trash and rubbish area, vehicle garage and agricultural product storage area.

Service Facilities:

conveyance items such as dumbwaiters, service shafts, laundry and garbage chutes, heating and cooking ducts and chimneys or gas vents.

Structural Area:

includes crawl space, balcony, ceiling and floor assembly, wall assembly, exterior wall or exterior roof and awning or canopy.

Vehicle Area:

includes engine area, fuel area, control area, passenger area and cargo area.

Outside Area:

includes open area such as lawn, field or park, court, patio, parking area, outdoor storage area and trash or rubbish area.

Death

A person killed as a direct result of a fire or a person who dies from a fire injury within one year following the date on which the injury was sustained.

Fire Death:

refers to a person who died as a direct result of a fire, either by smoke inhalation, burns or physical injury. Fire deaths also include persons killed as a result of a motor vehicle collision, an arson fire, an explosion, suicide, etc. where the Medical Examiner's Office has concluded the cause of death was due to fire.

Fuel or Energy

The fuel associated with the source of ignition. Includes coal, wood, fuel oil, gasoline, natural gas or other fuel gases, smoker's material, electricity, lightning or exposures.

Injury

A person injured as a direct result of a fire (a member of the fire department injured while in the process of fighting a fire or injured as a result of an accident while en route to or returning from the scene of an actual fire is considered a fire action injury).



Minor Injury:

an injury that does not require hospitalization of over a 24-hour period or absence from work of not more than one full day.

Light Injury:

an injury that required admission to a hospital of over 24 hours up to 48 hours and/or absence from work for a period of two to fifteen days.

Serious Injury:

an injury that required admission to a hospital for a period of more than 48 hours and/or an absence from work for a period exceeding fifteen days.

Material First Ignited

The actual material that ignites and creates the fire condition.

Structural Components, Finish Materials:

includes roof covering, wall covering, floor covering, structural component, ceiling covering and insulation.

Furniture, Furnishings:

includes furniture, ironing board, mattress, bedding, drapery and broom, mop or brush.

Clothing, Textiles:

includes clothing, fabric, fur and tarpaulin.

Wood, Paper Products:

includes wood, wood shavings, paper, cardboard and paper stock.

Flammable Liquids:

includes gasoline, fuel oil, flammable liquids, paint, varnish, tar, asphalt, polish and wax.

Flammable Gases:

includes natural gas, propane, anaesthetic gas, acetylene and hydrogen.

Chemicals:

includes starch, flour, cellulose nitrate, plastic, oxidizing material, magnesium and alloys, titanium, natural or synthetic rubber and ammonium nitrate.

Agricultural, Forestry Products:

includes fibres, grains, hay, trees, felled timber, grass, fertilizer and manure.

Miscellaneous:

includes coal, garbage, trash, oily rags and artificial trees.

Property Classification

The principal use or occupancy of the building.

Assembly:

property for the gathering of persons for civic, political, travel, religious, social, educational or recreational purposes. Includes theatres, amusement or recreation places, schools, colleges, universities, churches, social or sport clubs, libraries and museums, eating establishments and passenger terminals.

Institutional:

property for medical treatment, or care of persons suffering from illness, disease or infirmity, for the care of infants, convalescents or aged persons and for penal or corrective purposes. Includes prisons, jails, reformatories, homes for the aged, children's hospitals, hospitals and clinics.

Glossary



Residential:

property in which sleeping accommodation is provided for normal residential purposes. Includes one & two family dwellings, apartments, rooming or boarding houses, hotels, motels, dormitories and mobile homes.

Business and Personal Service:

property for conducting business. Includes offices, personal services such as hairdressing and data processing or storage facilities.

Mercantile:

property used for the display and sale of merchandise. Includes food and beverage sales, textile and clothing sales, furniture and appliance sales, books and specialty sales, recreational and hobby supply sales, repair shops, laundries, vehicle and boat sales and department or variety stores.

Industrial Manufacturing Properties:

property where raw materials are transformed into new products and where the component parts of manufactured products are assembled. Includes chemical, petroleum, paint and plastic manufacturing; wood, furniture, and paper manufacturing; metal product and electrical equipment manufacturing; food processing; beverage, tobacco, soap and margarine manufacturing; textile manufacturing; footwear and wearing apparel manufacturing; and vehicle and related equipment manufacturing.

Storage Properties:

property used primarily for the storage or sheltering of goods, merchandise, products, vehicles, or animals. Includes agricultural product storage; textile, fibre and clothing storage; processed food and beverage storage; flammable liquids, gas and petroleum products storage; wood, furniture, and paper products storage; chemical, paint and plastic storage; metal products, machinery, and electrical appliance storage and vehicle storage.



Special Property and Transportation Equipment:

mainly outdoor property and transport equipment. Includes outdoor property, piers, buildings under construction or demolition, watercraft, rail transport vehicles, ground transport vehicles, aircraft and other special equipment.

Miscellaneous:

includes laboratories, farm facilities, outbuildings, utilities, glass and pottery manufacturing, mining, communications and nucleonics.

Source of Ignition

The actual equipment, device or object which brings about ignition.

Cooking Equipment:

includes stove, range, food warming appliance, deep fat fryer, broiler and portable cooking unit.

Heating Equipment:

includes central heating unit, service water heater, space heater, fireplace, chimney, flue pipe and steam or hot water pipe.

Appliances and Equipment:

includes dryer, air conditioning equipment, pressing iron and incinerator.

Smoker's Material and "Open" Flames:

includes cigarettes, pipes, cigars and/or matches, lighters when used in conjunction with smoking. Includes matches and lighters not associated with smoker's material, candles, cutting torches, welding equipment and hot ashes.

Exposure:

includes exposure from an attached or detached structure, lumber yard, open fire, forest, grass and brush.

Miscellaneous:

includes internal combustion engine, heat treatment equipment, industrial oven, tar pot, fireworks, conveyors, commercial and industrial machinery and chemical reactions.

Digital images and photos submitted to enhance this report by fire and emergency response departments are gratefully acknowledged.

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www.municipalaffairs.gov.ab.ca/fco_index.htm